

Centre for Vision Research

July 1, 2009-June 30, 2010

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1. Mandate of the Unit

Our mandate is to pursue interdisciplinary research and training in the broadly-defined visual sciences and their applications. The sense of vision does not stand alone: it is the primary input not only for understanding the world around us, but also for guiding action in the world, for determining interaction with the world and inherently integrates with the other sensory processes. The CVR provides a simple and effective infrastructure that provides members with maximal freedom in pursuing their research programmes while encouraging collaboration among members and across disciplines.

2. Organizational Structure of the Unit

Director
Associate Director
CVR Steering Committee (see below)
Administrative Assistant
Systems Administrator

CVR Steering Committee 2009/10

Director	Hugh Wilson
Associate Director	Laurie Wilcox
Appointed by the Director	Richard Wildes
Ex-officio	Ian P. Howard
Ex-officio	John K. Tsotsos
Member	Laurence Harris
Member	Richard Murray
Member	Jennifer Steeves
Member	Carol Westall, Adjunct Rep.
Member	Student Rep.

3. Active Membership List

York University Faculty Members of the Centre (2009-2010)

Scott Adler	Associate Professor of Psychology, Faculty of Health Science Interests: development of eye movement control, visual selective attention, object recognition, and visual expectations
Rob Allison	Associate Professor of Computer Science Interests: stereoscopic vision, perceptual issues in virtual environments, eye movements
Doug Crawford	Professor of Psychology, Biology, and Kinesiology & Health Sciences Canada Research Chair in Visual-Motor Neuroscience Chair, Neuroscience Diploma Program Interests: three-dimensional eye and head movements, eye-hand coordination, trans-saccadic perceptual integration, modeling, neurophysiology
Joseph DeSouza	Assistant Professor of Psychology, Biology and Neuroscience Diploma, York University Interests: systems neuroscience, frontal cortex, attention, fMRI, corollary discharge, eye position signals and oculomotor neurophysiology
James Elder	Associate Professor of Psychology, Computer Science, and Mathematics Interests: human and computer vision
Mazyar Fallah	Assistant Professor of Kinesiology & Health Science Interests: visual perception and attention, object processing, oculomotor systems.
Laurence Harris	Chair, Department of Psychology, Faculty of Health Science Professor of Psychology and Biology Interests: perception and coding of space and self-motion
Denise Henriques	Assistant Professor Kinesiology & Health Science and Psychology Interests: motor learning, multisensory integration, visuomotor control, eye-hand coordination
Kari Hoffman	Assistant Professor of Psychology, Faculty of Health Science Interests: face processing, learning, memory and plasticity, sleep oscillations
Ian Howard	Distinguished Research Professor of Psychology and Biology Interests: space perception, eye movements, visual-vestibular interactions

- Richard Hornsey Associate Professor of Computer Science and Physics
Interests: integrated electronic sensors, biologically inspired image sensors, low vision enhancement systems, sensors for space applications
- Michael Jenkin Professor of Computer Science
Interests: computer vision, mobile robotics, immersive visual displays
- Richard Murray Assistant Professor of Psychology
Interests: visual psychophysics, spatial vision, 3D shape perception
- Hiroshi Ono Distinguished Research Professor of Psychology
Interests: visual perception of direction and distance, eye movement
- David Regan CAE/NSERC Industrial Research Professor
Distinguished Research Professor of Psychology and Biology
Professor of Ophthalmology and Medicine, University of Toronto
Fellow of the Royal Society of Canada
Foreign Fellow of the Royal Netherlands Academy of Science
Interests: psychophysics of spatial vision, motion, stereopsis, colour vision, vision aviation, visually evoked magnetic and electrical brain activity, visual disorders, auditory psychophysics
- Josée Rivest Associate Professor of Psychology, Glendon College
Department of Psychology of the Baycrest Centre for Geriatric Care
Interests: neuropsychology, face and object recognition, rehabilitation of visual neglect
- Lauren Sergio Associate Professor of Kinesiology, Faculty of Health Science
Interests: neural mechanisms of visually guided reaching in parietal and precentral cortex
- Minas Spetsakis Associate Professor of Computer Science
Interests: computer vision and robotics
- Jennifer Steeves Assistant Professor of Psychology, Faculty of Health Science
Adjunct Scientist Neurosciences and Mental Health,
The Hospital for Sick Children Research Institute
Adjunct Assistant Professor, Department of Ophthalmology and Vision Sciences, Faculty of Medicine, University of Toronto
Interests: face and scene processing in neurological patients and one-eyed observers; motion processing in strabismus

- Martin Steinbach Distinguished Research Professor of Psychology and Biology
 Director, Vision Science Research, Toronto Western Hospital
 Senior Scientist, Dept. of Ophthalmology, Hospital for Sick Children
 Director of Research, Department of Ophthalmology, University of Toronto
 Interests: eye movements, visual-motor coordination, clinical disorders of the oculomotor system
- Wolfgang Stuerzlinger Associate Professor of Computer Science
 Interests: human-computer interaction, virtual reality, computer graphics
- Christine Till Assistant Professor of Psychology, Faculty of Health Science
 Interests: brain injury across the lifespan; pediatric multiple sclerosis; cognitive recovery following traumatic brain injury (TBI) in adults; maternal fetal health; children's environmental health; visual toxicity
- John Tsotsos Distinguished Research Professor of Vision Science
 Professor of Computer Science
 Canada Research Chair in Computational Vision
 Adjunct Professor, Dept. of Computer Science, University of Toronto
 Adjunct Professor, Dept. of Ophthalmology, University of Toronto
 Interests: human and machine vision, computational models of attention, motion understanding, robotics
- Laurie Wilcox Associate Professor of Psychology, Faculty of Health Science
 Associate Director, Centre for Vision Research
 Interests: stereopsis/depth perception
- Richard Wildes Associate Professor of Computer Science
 Interests: spatiotemporal analysis of visual information, motion analysis, binocular vision, gesture recognition, biometrics
- Frances Wilkinson Professor of Psychology, Faculty of Health Science
 Affiliated Scientist, Division of Applied and Interventional Research, Toronto Western Research Institute, University Health Network, Toronto
 Adjunct Professor - Department of Ophthalmology, University of Toronto
 Interests: involvement of the visual system in migraine; intermediate visual form perception using psychophysical, computational and fMRI methodologies
- Hugh Wilson ORDCF Chair of Biological and Computational Vision
 Director, Centre for Vision Research
 Fellow, Canadian Institute for Advanced Research
 Director, CIHR Training Grant in Vision Health Research
 Fellow, Optical Society of America
 Interests: psychophysical and neural models of form vision; fMRI studies of cortical form vision, nonlinear dynamics of cortical function

Membership Categories

The steering committee will assign each person to the category that it feels fits best. New members appointed by director with advice from steering committee. The goal is to ensure all members have opportunity to influence the CVR.

Member - Tenured York Faculty who are active in research and primary research interest is consistent with CVR mandate

Associate - Contractually –limited York faculty who are active in research and interest is strongly relevant to CVR mandate

Sr. Research Associate - Sr. Research Associates who are active in research and interest is strongly relevant to CVR mandate

Affiliate - Research Associates, graduate students, post-doctoral fellows, visitors, programmers, industrial partners, administrative assistants, staff (sponsored by a CVR Member, Associate or Adjunct)

Adjunct - Faculty outside York who would have qualified for Member or Associate status or who is a collaborator of a Member or Associate

Benefits of Membership

Member - use of CVR facilities/labs; use of administrative assistant and/or secretary; eligible for membership on steering committee; eligible to be a CVR grant PI; included on CVR web pages, brochure; eligible as primary supervisor of CVR graduate student; eligible for overhead sharing

Associate - use of CVR facilities/labs; use of CVR technical staff for your lab; use of administrative assistant and/or secretary; eligible for membership on steering committee; eligible to be a CVR grant PI; included on CVR web pages, brochure;

Sr. Research Associate - use of CVR facilities/labs; use of administrative assistant and/or secretary; included on CVR web pages, brochure

Affiliate - use of selected CVR facilities/labs; use of administrative assistant and/or secretary; included on CVR web pages, brochure

Adjunct - enjoys regular visits to CVR (minimum, one day per month); desk to work at while visiting; use of selected CVR facilities/labs; included on CVR web pages, brochure; co-investigator status on CVR grants; small honorarium for expenses; eligible as co-supervisor of CVR graduate student

Renewal/Review/Termination of Membership

- Continued membership to CVR includes participation (i.e. seminars, attending annual retreat, bi-annual conference, submission to the annual report and CVR brochure)
- Mid-term review of Director
- Service category to be added to the CVR Annual report
- Problem cases will be dealt with by sending a letter to the member.

4. Activities of the Unit

- **Grants (CVR) for 2009/10 - \$1,429,092**
- **Grants (Overall) for 2009/10 - \$6,019,710**

- Ian Howard Lecture Series. This named lecture series brought two outstanding senior vision scientists to York to present overviews of their research: Steven Zucker, Yale University and Nancy Kanwisher, Massachusetts Institute of Technology. The series is a continued success, so CVR will continue the Ian Howard Lectures indefinitely.

- Weekly Seminar Series. In addition to the Ian P. Howard lectures, the CVR hosts a regular Friday seminar series throughout fall and winter semesters.

- Vision Research Summer School for undergraduates. In an effort to attract more outstanding graduate students to York to do research with faculty in CVR, the CVR Summer School in Visual Science 2010 for undergraduates was held on May 17-21. Over 100 students from around the world applied to participate, and the top 24 were chosen to attend with all expenses paid. Students came from Canada, the US, and several foreign countries. All were uniformly impressed by the research presentations and lab experiences with CVR faculty. We are very optimistic that this will translate into more outstanding applicants to do graduate research at CVR, but we will not know until graduate applications are all submitted in February 2011.

- Publications for 2009/10:

Books	-	5
Chapters in Books	-	23
Refereed Journals	-	89
Proceedings	-	145
Conference Presentations	-	31
Colloquia	-	41

5. Measures taken to Promote Equity as Enunciated in the University Academic Plan

The CVR is an interdisciplinary research group in vision. As such, our seminar series and international conference are designed to foster interdisciplinary research and collaborations. As the largest and most prominent vision research group in Canada, we feel that we are highly successful in this endeavour. As all faculty are hired by academic departments at

York, CVR is not permitted to hire any faculty. However, our membership reflects broad diversity in accordance with equity guidelines.

6. **Graduate Training Activities/Accomplishments**

MA	-	19
MSc	-	33
PhD	-	52
Post-Doctoral Fellows	-	12
Research Scientists	-	13

7. **Any Changes in Physical Space at the Unit**

In March, 2010, the Sherman Health Science Research Centre opened, and the following CVR faculty moved their laboratories and offices to that building: Laurence Harris, Michael Jenkin, Scott Adler, and Jennifer Steeves. In addition, Keith Schneider, who joined York and the CVR on July 1, 2010, also has his laboratory in Sherman. These moves provided additional space for CVR and also freed space for Computer Science (formerly occupied by Jenkin) and Psychology (former space of Steeves and Adler).

8. **List of all Contractual Obligations Entered into By or on Behalf of the Unit**

The CVR as a whole did not enter into any contractual obligations during 2009-2010.